Claim Amendments

Please amend the claims as follows:

1. (original): A conveyor system comprising:

   a main conveyor conveying articles on an outer conveying surface along a main conveying path;

   at least one cross conveyor disposed along the main conveying path and intersecting the main conveyor, the cross conveyor including:

   a roller-top belt having a plurality of rollers extending outward of an outer article-supporting surface and having axles for rotation of the rollers about axes generally perpendicular to the main conveying path, and

   a drive engaging the roller-top belt to advance the belt along a discharge path generally perpendicular to the main conveying path.

2. (original): A conveyor system as in claim 1 wherein the drive is a bidirectional drive that drives the belt in opposite directions to divert articles selectively off the main conveying path along the discharge path.

3. (original): A conveyor system as in claim 1 wherein the main conveyor comprises a series of endless belt loops along the main conveying path separated by a gap sized to admit the cross conveyor between consecutive belt loops.

4. (original): A conveyor system as in claim 1 wherein the main conveyor comprises a belt extending along the main conveying path, the belt's outer article-conveying surface defining a conveying plane along a major portion of the main conveying path and disposed below the cross conveyor along a minor portion of the main conveying path.

5. (original): A conveyor system as in claim 1 wherein the main conveyor includes a gap along the main conveying path at a cross-conveyor position, the gap being wide enough to admit the cross conveyor and narrow enough for a conveyed article to span the gap.
6. (original): A conveyor system as in claim 1 wherein the outer conveying surface of the main conveyor defines a conveying plane along a major portion of the main conveying path and wherein the drive for the roller-top belt includes sprocket sets on opposite sides of the main conveyor about which the roller-top belt is looped and supported with the outer article-supporting surface slightly above the main conveying plane when the drive is driving the roller-top belt.
7. (original): A conveyor system as in claim 1 wherein the cross conveyor further includes a wear surface for the roller-top belt beneath the outer article-supporting surface of the roller-top belt wherein the wear surface is positioned to support the roller-top belt with its outer article-supporting surface positioned relative to the outer conveying surface of the main conveyor to receive from the main conveyor conveyed articles atop the rollers when the roller-top belt is stopped.
8. (original): A conveyor system as in claim 1 wherein the cross conveyor further includes a wear surface for the roller-top belt positioned beneath the outer article-supporting surface of the roller-top belt and wherein the drive includes sprockets on opposite sides of the main conveyor about which the roller-top belt is looped, wherein the sprockets are elevated relative to the wear surface so that a tangent line between an outer periphery of a sprocket on one side of the main conveying path and an outer periphery of a sprocket on the opposite side lies above the support surface.

9. (original): A conveyor system as in claim 1 further comprising means for selectively raising and lowering the roller-top belt relative to the upstream conveyor and the downstream article receiver.

10. (original): A conveyor system as in claim 1 further comprising sensors for sensing characteristics of the conveyed articles and for activating the drive to move the roller-top belt in one direction or the other depending on a predetermined characteristic of an article at the gap.

11. (currently amended): A conveyor system comprising:

an upstream conveyor conveying articles along a main conveying path;

a downstream article receiver aligned with the upstream conveyor and spaced apart from the upstream conveyor across a gap to receive articles from the upstream conveyor across the gap;

a cross conveyor disposed in the gap between the upstream conveyor and the downstream article receiver, the cross conveyor including:

a roller-top belt having a plurality of rollers having axles for rotation of the rollers about axes generally perpendicular to the main conveying path, and

a drive engaging the roller-top belt to selectively stop and ~~drive~~ advance the roller-top belt bidirectionally across the main conveying path along the gap.

12. (original): A conveyor system as in claim 11 wherein the upstream conveyor and the downstream article receiver are belt conveyors.

13. (original): A conveyor system as in claim 11 wherein the upstream conveyor and the downstream article receiver comprise a continuous conveyor belt following a belt path

coincident with the main conveying path in the upstream conveyor and the downstream article receiver and disposed beneath the roller-top belt in the gap.

14. (original): A conveyor system as in claim 11 wherein the upstream conveyor, the downstream article receiver, and the roller-top belt include upper article-supporting surfaces generally coplanar with each other at the gap.

15. (original): A conveyor system as in claim 11 further comprising means for selectively raising and lowering the roller-top belt relative to the upstream conveyor and the downstream article receiver.

16. (currently amended): A conveyor system as in claim 15 wherein the means for selectively raising and lowering the roller-top belt is coordinated with the drive in order to raise the roller-top belt above the upstream conveyor and the downstream article receiver when the drive is activated to ~~move~~ advance the roller-top belt across the main conveying path along the gap.

17. (original): A conveyor system as in claim 15 wherein the means for selectively raising and lowering the roller-top belt comprises a wear surface supporting an upper surface of the roller-top belt from below and a lift that raises and lowers the support surface.

18. (original): A conveyor system as in claim 11 wherein the width of the gap from the upstream conveyor to the downstream article receiver is less than the dimensions of the footprint of the conveyed articles so that the conveyed articles can span the gap.

19. (original): A conveyor system as in claim 11 further comprising a sensor for sensing a characteristic of the conveyed articles and for activating the drive to advance the roller-top belt in one direction or the other depending on a predetermined characteristic of an article at the gap.

20. (original): A conveyor system as in claim 11 wherein the cross conveyor further includes:

a wear surface positioned in the gap to support the roller-top belt and articles conveyed atop its rollers when the roller-top belt is not being driven; and

sprocket sets on opposite sides of the main conveying path about which the roller-top belt is looped, the sprockets being elevated relative to the support surface to raise the roller-top belt above the support surface when the roller-top belt is being driven.

21. (currently amended): A conveyor system comprising:

a downstream conveying surface;

an upstream conveying surface conveying articles toward the downstream conveying surface along a main conveying path and being separated from the downstream conveying surface across a gap;

a cross conveyor disposed in the gap and including a roller-top belt having rollers with salient portions extending above a top side of the belt to contact conveyed articles received ~~form~~ from the upstream conveying surface, the rollers having axles for rotation of the rollers about axes generally perpendicular to the main conveying path.

22. (original): A conveyor system as in claim 21 wherein the cross conveyor includes a bidirectional drive engaging the roller-top belt for advancing the roller-top belt in opposite directions generally perpendicular to the main conveying path.

23. (original): A conveyor system as in claim 22 further comprising sensors for sensing characteristics of the conveyed articles and for activating the drive to advance the roller-top belt in one direction or the other depending on a predetermined characteristic of an article at the gap.

24. (original): A conveyor system as in claim 21 wherein the upstream conveying surface and the downstream conveying surface are at a first level at the gap and wherein the roller-top belt is movable from a first position wherein the salient portions of the rollers are at the first level to a second position wherein the salient portions are at a second level higher than the first level.

25. (original): A conveyor system as in claim 24 wherein the cross conveyor further includes a wear surface supporting the roller-top belt below the top side when the roller-top belt is in the first position.

26. (original): A conveyor system as in claim 24 wherein the roller-top belt is in the higher second position as it advances and in the first position when it is stopped.

27. (original): A conveyor system as in claim 21 wherein the gap between the upstream and downstream conveying surfaces is less than the diametric dimensions of the footprints of conveyed articles.

28. (original): A conveyor system as in claim 21 comprising a conveyor belt having a top surface forming the upstream and the downstream conveying surfaces.

29. (original): A conveyor system for selectively discharging articles comprising:

a main conveyor conveying articles along a main conveying path and interrupted by one or more gaps along the main conveying path;

one or more cross conveyors intersecting the main conveying path at the one or more gaps, each cross conveyor including:

a roller-top belt having a plurality of rollers arranged to rotate freely to roll articles received from the main conveyor across the gap in the direction of the main conveying path, and

a drive engaging the roller-top belt to advance the roller-top belt across the main conveying path to divert articles from the main conveying path.

30. (original): A conveyor system as in claim 29 wherein the drive is a bidirectional drive selectively advancing the roller-top belt in opposite directions generally perpendicular to the main conveying path to discharge articles in opposite directions.

31. (original): A conveyor system as in claim 29 wherein the roller-top belt further includes axles for the rollers defining axes of rotation generally perpendicular to the main conveying path.

32. (currently amended): A conveyor system comprising:

a main conveyor conveying articles along a main conveying path and interrupted by one or more gaps along the main conveying path;

one or more cross conveyors intersecting the main conveying path at the one or more gaps, each cross conveyor including:

a roller-top belt capable of advancing in at least one direction across the main conveying path and having a plurality of rollers arranged to receive conveyed articles in the gap from the main conveyor and to rotate freely in the direction of the main conveying path, and

means for raising and lowering the roller-top belt between a first position wherein a conveyed article is supported by both the roller-top belt and the main conveyor and a second higher position lifting a conveyed article supported on the roller-top belt out of contact with the main conveyor.

33. (original): A conveyor system as in claim 32 wherein the means for raising and lowering comprises sprocket sets on opposite sides of the main conveying path about which the roller-top belt is looped, the sprockets being elevated relative to the main conveyor to raise the

roller-top belt to the higher second position when the roller-top belt is being driven and to allow the roller-top belt to sag into the lower first position when the roller-top belt is stopped.

34. (original): A conveyor system as in claim 33 wherein the weight of a conveyed article on the roller-top conveyor belt when stopped lowers the roller-top belt to the first position.

35. (original): A conveyor system as in claim 33 wherein each cross conveyor includes a wear surface disposed in the gap on which the roller-top belt sits when stopped and supporting a conveyed article.

36. (original): A conveyor system as in claim 32 wherein the rollers are arranged to rotate freely about axes generally perpendicular to the main conveying path to direct articles received from the main conveyor downstream back onto the main conveyor when the roller-top belt is stopped.

37. (original): A conveyor system comprising:

a main conveyor conveying articles along a main conveying path and interrupted by at least one gap along the main conveying path;

at least one cross conveyor intersecting the main conveying path at a gap, each cross conveyor including:

a roller-top belt having a plurality of rollers arranged to rotate freely to roll articles received from the main conveyor across the upstream end of the gap in the direction of the main conveying path, and

a drive engaging the roller-top belt to selectively stop the roller-top belt to allow a conveyed article to ride across the roller-top belt on the rollers past the gap along the main conveying path, advance the belt in a first cross direction along a discharge path diverting a conveyed article from the main conveying path to a first side of the

conveying path, and advance the belt in an opposite second cross direction along the discharge path diverting a conveyed article from the main conveying path to an opposite second side of the conveying path.

38. (original): A conveyor system as in claim 37 further comprising a sensor for sensing a characteristic of a conveyed article and coupled to the drive for de-activating the drive to stop the roller-top belt or for activating the drive to advance the roller-top belt in the first direction or the second direction depending on a predetermined characteristic of the conveyed article, whereby the cross conveyor allows a conveyed article to continue along the main conveying path or diverts the conveyed article along the discharge path to the first side or the second side of the main conveying path.